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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

WASHINGTON, JAMARES

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/767,577	Applicant(s) KRABbenhOFT, UWE-JENS	
	Examiner JAMARES WASHINGTON	Art Unit 2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 July 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5 and 6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5 and 6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

Amendments and response received July 18, 2008 have been entered. Claims 1-3, 5 and 6 are currently pending. Claim 4 has been canceled. Claim 1 has been amended and claim 6 has been added to further distinguish applicant's invention from the prior art of record. Amendments and response are addressed hereinbelow.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stuart Ring et al (US 5754184) in view of Manabu Ohga (US 7230737 B1).

Regarding claim 1, Ring et al discloses a method of transforming color values of a first device-dependent color space into color values of a second device-dependent color space, to effect a substantially identical visual impression of colors reproduced in the first and second color spaces (Col. 2 lines 1-6), the method which comprises:

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providing a first color profile characterizing the first color space (Fig. 1 numeral 10; scanner RGB signal) and providing a second color profile characterizing the second color space (Fig. 1 numeral 24; Monitor RGB);

wherein the first and second color profiles specify an association between the color values of the first and second device-dependent color spaces and the color values of a device-independent color space (Col. 2 lines 33-36 and Col. 2 lines 49-58);

wherein a white point of the first device-dependent color space, a white point of the second device-dependent color space, and a white point of the device-independent color space are described by device-independent white point values ("scaling: destination/source" at Col. 7 lines 25-34; Col. 6 line 36 Input Adaptation white point, Col. 6 line 28 D5000 adaptation white point, Col. 7 line 56 9300K adaptation white point for monitor);

determining relative color values of the device-independent color space from the color values of the first device-dependent color space by way of the association specified in the first color profile (Col. 7 lines 15-19);

converting the relative color values into absolute color values in a ratio corresponding to a ratio of the values of the white point of the first device-dependent color space and the white point of the device-independent color space (Col. 7 lines 20-23);

determining chromatically adapted color values from the absolute color values by way of a chromatic adaptation transformation, the chromatic adaptation transformation includes converting the absolute color values into receptor signals L, M, S of color receptors by use of matrix multiplication (Col. 7 lines 25-50 wherein the receptor signals (L, M, and S) are represented by ρ , β , and γ);

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converting the chromatically adapted color values into relative chromatically adapted color values in a ratio corresponding to a ratio of the values of the white point of the device-independent color space and the white point of the second device-dependent color space (Col. 7 lines 53-65); and

determining color values of the second device-dependent color space from the relative chromatically adapted color values by way of the association specified in the second color profile (Col. 8 lines 10-27).

Ring fails to expressly disclose wherein the first and second color profiles are formatted in accordance with the ICC specification (International Color Consortium).

Ohga, in the same field of endeavor of correcting color image signals according to viewing conditions (Abstract), teaches the first and second color profiles are formatted in accordance with the ICC specification (International Color Consortium) (Col. 1 lines 27-33 wherein ICC specification is used for color conversion).

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the method of transforming color values of a first device-dependent color space into color values of a second device-dependent color space, to effect a substantially identical visual impression of colors reproduced in the first and second Color spaces as disclosed by Ring to implement the method utilizing color profiles formatted in accordance with the ICC specification as taught by Ohga because the ICC profiles provide for standardized formats of needed color information, including device transform color information, gamut mapping information, coordinate transform information (such as transforms to perceptual color space) and the like.

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Ring fails to disclose the conversion of relative color values into absolute color values in a ratio of the white point of the first device-dependent color space over the values of the white point of the device independent color space.

Ohga, in the same field of endeavor, teaches the conversion of relative color values into absolute color values in a ratio of the white point of the device-independent color space over the values of the white point of the first device-dependent color space (Col. 1 lines 44-60), although it is the opposite of the claimed ratio.

A “ratio” is simply an expression which compares quantities relative to each other. One of ordinary skill in the art would know that one would not obtain the same results using one ratio as opposed to using the opposite of that same ratio within an equation to obtain some known result, but the results from Applicant’s invention will not provide “unexpected” results from using the “reciprocal ratio” claimed over that which has been described in the prior art of record. What a reference teaches or suggests must be examined in the context of the knowledge, skill, and reasoning ability of a skilled artisan. What a reference teaches a person of ordinary skill is not limited to what a reference specifically “talks about” or what is specifically “mentioned” or “written” in the reference. When there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely that the product is not of innovation but of ordinary skill and common sense. One of ordinary skill could have easily adapted the equations for obtaining the absolute color values by reversing the ratio as disclosed by the prior art of record to obtain that which is claimed by the present invention. Therefore, a person of ordinary skill in the art would

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have had good reason to pursue the known option of reversing the ratio as disclosed in the prior art to obtain relative results from the manipulated equations. It would have required no more than “ordinary skill and common sense” and would not provide any disclosed advantage over the prior art of record.

Regarding claim 3, Ring discloses the method according to claim 1, which comprises carrying out the chromatic adaptation transformation in accordance with Von Kries matrix (Col. 7 lines 23-24).

Regarding claim 6, Ring et al discloses the method according to claim 1.

Ring et al fails to disclose which comprises converting the relative color values component by component into the absolute color values $[X_1, Y_1, Z_1]$ in the ratio of the white point values of the first device-dependent color space WP1 and the white point of the device-independent color space WPD50 according to the formula:

$$X_1 = X_{PCS1} \times X_{WP1}/X_{WPD50}$$

$$Y_1 = Y_{PCS1} \times Y_{WP1}/Y_{WPD50}$$

$$Z_1 = Z_{PCS1} \times Z_{WP1}/Z_{WPD50}$$

However Ohga, in the same field of endeavor discloses converting the relative color values component by component into absolute color values (see rejection of claim 1; equations at Col. 1 lines 55-60). Following the reasoning as conveyed in the rejection of claim 1, the

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reciprocal of the disclosed ratio in the equations would provide the equations as presently claimed with no disclosed advantage of using one over the other. (See rejection of claim 1)

3. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stuart Ring et al (US 5754184) in view of Manabu Ohga (US 7230737 B1) as applied to claim 1 and further in view of Graham D. Finlayson et al (IS&T/SPIE Electronic Imaging, SPIE Vol. 4300, January 2001).

Regarding claim 2, Ring et al discloses the method according to claim 1.

Ring et al fails to disclose which comprises carrying out the chromatic adaptation transformation by way of a Bradford matrix (B), with:

$$B = \begin{pmatrix} 0.8951 & 0.2664 & -0.1614 \\ -0.7502 & 1.7135 & 0.0367 \\ 0.0389 & -0.0685 & 1.0296 \end{pmatrix}.$$

Finlayson et al teaches, in the same field of endeavor of accurate color duplication ("reproducing the appearance of image colors" at page 1 paragraph 3), a chromatic adaptation transformation by way of a Bradford matrix ("Bradford Chromatic Adaptation Transform (BFD CAT)" page 2, numeral 2).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the Bradford matrix in place of the Von Kries matrix described in the chromatic

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adaptation transformation of Ring's et al color correction techniques because, at the time, the Bradford matrix was the most widely used and newest transform giving the most accurate results in color reproduction.

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stuart Ring et al (US 5754184) in view of Manabu Ohga (US 7230737 B1) and further in view of Kim Jin-Seo et al ("Development of Color Management System Prototype" IEEE, 1998).

Regarding claim 5, Ring discloses the method according to claim 1.

Ring fails to disclose or suggest leaving unchanged the associations contained in the color profiles between the color values of the device-dependent color space and the color values of the device- independent color space.

However, Jin-Seo et al further teaches the above limitation ("Furthermore, we develop new tags for scanner and monitor which are not in the current ICC profiles. When users select one of the profiles, a dialog box shows the information of the profile..." at page 3 column 1 under "Profile Editor" line 6).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the profile editing feature of saving relative profile matches as taught by Jin-Seo in the method of using ICC color profiles as disclosed by Ring to enable users to "change the parameters so that the output image matches the original one" (at page 3 column 2 line 3, Jin-Seo).

Response to Arguments

Applicant's arguments with respect to claim 1 pertaining to the "opposite ratio" has been considered but are moot in view of the new ground(s) of rejection.

4. Applicant's arguments filed July 18, 2008 have been fully considered but they are not persuasive.

Applicant's remarks: The step of claim 1 that has been referenced above reads, "converting the relative color values into absolute color values". Neither Ring et al. nor Woolfe et al., which was cited in the rejection of claim 4, teach converting relative color values into absolute color values.

Examiner's response: The above stated conversion of "relative color values" into "absolute color values" is clearly shown in the rejection above. Col. 7 lines 20-23 disclose converting CIE XYZ which are "relative" to the input viewing conditions to "intermediate" CIE XYZ values which accounts for differences in a human observers state of chromatic adaptation for the input and reference viewing conditions. Although the terms "relative color values" and "absolute color values" are not used to describe the process, the same process occurs to obtain the "intermediate" values as disclosed, thereby reading on Applicant's "absolute" values.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMARES WASHINGTON whose telephone number is (571)270-1585. The examiner can normally be reached on Monday thru Friday: 7:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, King Poon can be reached on (571) 272-7440. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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October 28, 2008